

27 March 1989

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NOTE FOR:

FROM:

SUBJECT: Commercialization of LANDSAT

Attached at Tab A is a law review article that discusses the Land Remote Sensing Act of 1984 and the problem it attempted to solve: the commercialization of LANDSAT. The article makes clear, in my opinion, that the viability of LANDSAT commercialization was a major concern of the Executive branch and the Congress when the legislation was passed. See article at 74-85. Specifically, the extent and nature of the market was a concern of the drafters. Although I cannot point to a particular portion of the legislative history (much of which I do not have), it is my belief that these concerns are the reason the first version of the legislation, the one passed by the House of Representatives, contained the requirement, which they ultimately enacted into law, that "[i]t shall be the policy of the United States both to commercialize those remote-sensing space systems that properly lend themselves to private sector operation and to avoid competition by the Government with such commercial operations. . . ." Sec. 103(c), 15 U.S.C. § 4203(c).

The newspaper articles attached at Tab B reflect that LANDSAT has had significant commercial viability problems that almost resulted in the recent termination of the system. I think the Mo Rosen proposal, if adopted, could significantly exacerbate those problems.

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RAY CLINE

# Nickel and diming Landsat

An emergency congressional hearing was convened last Tuesday to examine why an invaluable bit of advanced technology enabling the United States to collect valuable imagery of the earth's surface is in danger of being phased out at the end of this month.

Testimony was presented by a number of expert witnesses and several congressmen commented as members of the Subcommittee on Natural Resources, Agricultural Research and Environment of the House Committee on Science, Space and Technology. The gist of the remarks was that the executive branch was about to commit an incredibly stupid folly by allowing data flow of importance to many government agencies be shut down because nobody wants to pay the bill.

If current circumstances prevail, the Earth Observation Satellite Co. (EOSAT) will be forced to shut down Landsats 4 and 5 at the end of March, essentially going out of business.

The official explanation from the National Oceanic and Atmospheric Administration, the government agency that oversees Landsat operations, is budgetary constraints. Yet only \$10 million is needed to keep these two satellites operational. I suspect the real reason for Landsat's possible demise has more to do with a failure of national will and a lack of strategic vision.

The testimony made clear that the Defense Department, the Interior Department, the Agriculture Department, the Commerce Department, the State Department and the intelligence community all benefit from the images of the earth provided by Landsat. It is amazing that these satellites are still functioning several years after their designed life expectancy, a technical marvel. Because of this bonus benefit to EOSAT and the whole world, nobody has budgeted the money to keep these surveillance systems operational beyond March 31.

This folly is all the harder to believe because budgetary limitations and other difficulties have kept the next satellite, Landsat 6, from being orbited until 1991. Thus the only usable imagery in the public domain for commercial exploitation is the bonus operational capacity of Landsats 4 and 5.

Fortunately, the heat being put upon the Bush administration as a result of this situation has caused Vice President Dan Quayle, head of the Space Council, to state categorically the money would be found somewhere and somehow to keep Landsats 4 and 5 going for a time, perhaps a few weeks or months. Yet

Fortunately, the heat being put upon the Bush administration as a result of this situation has caused Vice President Dan Quayle, head of the Space Council, to state categorically the money would be found somewhere and somehow to keep Landsats 4 and 5 going for a time, perhaps a few weeks or months. Yet nobody knows where the funds will come from to budget for operations as long as these systems perform down until 1991. A clear and firm policy on civil remote-sensing information is hard to perceive in this fumbling approach to using a great national asset.

In the 1950s, the United States desperately needed to understand the kind of world and the potential conflicts it was confronting. An appropriate national strategy needed to be formulated. With national uncertainty about dangers ahead preoccupying American citizens, the president ordered development of the classified government overhead reconnaissance systems.

Associated institutions were organized to maximize exploitation of the information being gathered by overhead reconnaissance through research and technical analysis.

When I was deputy director for intelligence at the CIA, I supervised the joint facility, the National Photographic Interpretation Center, which served us conspicuously well during the Cuban missile crisis of 1962.

Without question, our nation's surveillance capabilities increased international security and stability substantially, in part because at that time President Dwight D. Eisenhower, on the basis of facts about world power, adopted a firm strategy of containment and deterrence.

In 1972, a twin surveillance system, unclassified and not managed

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by military or intelligence agencies, was born with the launching of the Earth Resources Technology Satellite, later named Landsat. Landsat was a direct response to the growing awareness of global environment challenges. Even though the resolution capabilities of the first three satellites orbited were quite poor, Landsat did much to reshape our perceptions of Earth as an integrated ecosystem.

In 1982, a new instrument, the thematic mapper, was included that further increased the utility of data gathered by Landsat. With a resolution of objects on earth of 30 meters in dimension, the information was relevant to environmental and military planners alike. Images acquired by Landsat are used for many purposes, including economic resources development and environmental control. No matter how you slice it, Landsat is an unqualified success story, although mostly unknown and unsung.

The squabble over funding of Landsat served to detract from the core issue. Our government still had not made a commitment to using our civilian remote-sensing assets as part of an integrated national security strategy, something that would be much to our benefit.

In 1986, the French shattered any illusion that the United States had a monopoly on earth-observation technology when they launched SPOT-1, an advanced civilian remote-sensing satellite with resolution capabilities of 10 and 20 meters. SPOT has been used to monitor

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military activities in the Soviet Union and the rest of the world. In another development, the Soviet Union entered the commercial remote-sensing market and now distributes images of 5-meter dimensions on a limited scale.

With the information age literally exploding all around us, nations of all ideological persuasion are moving inexorably into a new era of international openness.

Global changes are also numerous and pose new challenges to U.S. national security. The environmental concerns first detected by Landsat have proven to be of greater consequence than previously imagined, as acid rain and the greenhouse effect on global warming clearly demonstrate. All told, the United States is once again in a position, as we were 40 years ago, where its citizens must understand the extent of modern-day global changes and challenges.

As former director of Central Intelligence, President Bush is uniquely qualified to grasp the implications of this challenge. The time is ripe for the president to rethink Ike's 1955 "open skies" proposal and incorporate it in a strategic policy that will contribute to the security and economic strength of the United States and a growing number of nations.

A revised "open skies" policy will not undermine our classified intelligence efforts, but will serve the interests of international peace-keeping, of economic resources development and environmental quality control.

As we enter the turbulent 1990s, credible information available in the public domain will determine who wins and who loses geopolitically, more, even, than missiles and guns.

So, whatever it takes, I hope all the parties present today can resolve their differences and fund the operations of Landsats 4 and 5 for the remainder of fiscal 1989 and as long as the satellites last. They are a small but significant part of an ongoing information-age policy of peace, security, prosperity and environmental safety.

Once we confirm the importance of keeping Landsats 4 and 5 in operation, we should begin exploring the larger policy options before us. If we cannot make these small steps in support of the Landsat programs, the future of Spaceship Earth is in doubt. Surely, \$10 million is not much to spend when you look at the larger global picture.

If we do not understand that basic fact, we will not be part of the solution of a sound future for our planet, but regrettably part of the problem.



NEW YORK TIMES

ALL STREET J.

WASHINGTON TIMES

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## Last Civilian Photography Satellites to Shut Down

By WILLIAM J. BROAD

Running out of money for the program, the Federal Government yesterday ordered the shutdown of the last two American satellites in a series that pioneered the photography of the Earth from space and offered a valuable tool for crop forecasting, mineral exploration and forest management.

The process of notifying customers and turning off the Landsat satellites will take a month, giving backers of the spacecraft time to try to save them.

"This is a damned outrage, and I'm going to do everything in my power to stop it from happening," said Representative George E. Brown Jr., a Cali-

fornia Democrat who has long championed the civilian satellite system.

The shutdown of the two satellites would mark the United States' withdrawal from providing space photographs for civilian purposes, a field it founded. Foreign rivals, including the Soviet Union and France, now operate similar satellites.

### Could Last Another Year

The American satellites, Landsat 4 and Landsat 5, were launched in 1982 and 1984 respectively and have long outlived their expected lifetimes of three years. Experts now say the two could last well into next year and possi-

bly beyond.

To date, nearly \$1 billion has been spent to develop, launch and operate the satellites, which orbit at a height of about 400 miles and photograph the whole earth. It costs \$18.8 million a year to operate them.

No money for operations was set aside by the Reagan Administration in its fiscal 1989 budget, but Congress provided six months of operating funds. That money will run out on March 31, forcing the National Oceanic and Atmospheric Administration, which oversees the system, to order yesterday that it be readied for shutdown.

"It's one of the most shortsighted

moves in space history," said Peter D. Zimmerman, an expert on such satellites and a senior associate at the Carnegie Endowment for International Peace in Washington. "For lack of an infinitesimal sum, we're discarding a system that founded the whole field of remote sensing."

Bud Litten, a spokesman for N.O.A.A., said the prospects for a rescue "don't look good," adding, "We're out of money, that's all. The situation's pretty bleak."

### Hearing Scheduled in the House

A subcommittee of the House Science, Space and Technology Committee has scheduled a hearing for March 7 on the proposed shutdown.

The satellites are run under contract to the Government by the Earth Observation Satellite Company of Lanham,

Md., which sells the space photos for between \$50 and \$1,000. Yesterday Peter M. P. Norris, the company's executive vice president, called the Government action "beyond belief" and vowed to work feverishly to reverse it.

A company statement issued yesterday said that by March 15 all services to customers would cease, including access to over two million Landsat photographs in archives. Every month, 38,800 new images are relayed to earth by the two satellites in space.

Fourteen countries receive pictures from the satellites, while Pakistan and Ecuador are building ground stations to pick up the data as well.

The satellites were originally put into orbit by the Government for scientific use and are not commercially self-supporting, although some experts say they could soon be so.

The Landsat series of satellites was developed by the National Aeronautics and Space Administration, with the first one being launched in 1972. Over the years, they have been used not only by agriculturists, geologists, oceanographers, ecologists and others concerned with land management but also by African relief agencies to identify little used roads in remote regions.

Despite the current budget difficulties, funding is continuing for the construction of Landsat 6, which is scheduled for launching in June 1991. Some scientists have expressed concern that shutting down the two satellites will leave gaps in the historical record of Earth's changing environment as seen from space.

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## U.S. Halts Plan to Turn Off the Landsat Satellites

By JOHN NOBLE WILFORD

Two Landsat Earth-sensing satellites that were to be turned off at the end of the month for lack of money have been given a reprieve by the Bush Administration.

The Department of Commerce said Wednesday that it had rescinded the order to shut down Earth Observation Satellite Company, or Eosat, the private operator of Landsat for the Government, said yesterday it had resumed taking orders for the data and images that are widely used by Government agencies and commercial customers for producing maps, searching for minerals and studying crop conditions and patterns of land use.

If the satellites, Landsat 4 and 5, had been switched off, it would have put the United States out of the business of supplying data on Earth resources gathered from space until at least 1991, when the Landsat 6 satellite is scheduled to be launched. France is promoting international sales of data from its

SPOT-Image satellite system, and the Soviet Union is now offering similar information from its remote sensing satellites.

### Quayle Promises Money

Vice President Dan Quayle, heading the newly created National Space Council, made the arrangements to block the termination of Landsat operations. He said the Administration would find the money to keep the satellites in service at least until the completion of a study to determine the need for them.

According to Government estimates, it will cost about \$9.4 million to keep the system running through Sept. 30, the end of the fiscal year.

In Congressional testimony last week, Thomas N. Pyke Jr., assistant administrator of the National Oceanic and Atmospheric Administration, which oversees the program, said Federal agencies that use Landsat data

would probably be asked to contribute financing until the policy review could be completed. These include the departments of Defense, Agriculture and Interior and the National Aeronautics and Space Administration.

### Details Known in a Week

Congressional aides who attended a meeting with Mr. Quayle last week said he assured them the money would be available but did not discuss how it would be raised or how long the policy review would take. Debbie Williams, a spokeswoman for Eosat, said details of the financing arrangement should be known in about a week.

The transfer of the Landsats from the Government to private operation was initiated by the Reagan Administration, with Federal money still used to subsidize operations through the transition. Ms. Williams said the company's goal is to "take the program out of the hands of the taxpayers" in about 1991.